Serial Number: 10/607,783

Filing Date: June 27, 2003

Title: HEAT SINK ASSEMBLY AND METHOD OF ATTACHING A HEAT SINK TO AN ELECTRONIC DEVICE ON A

MOTHERBOARD

## **IN THE CLAIMS**

The pending claims are reproduced for the Examiner's convenience.

## (Canceled) 1-20.

- 21. (Previously Presented) An electronic assembly comprising:
- a heat sink that includes an upper surface and a lower surface and an opening extending between the upper and lower surfaces of the heat sink;
  - a motherboard;
  - an electronic device between the motherboard and the lower surface of the heat sink;
- a pin that contacts the upper surface of the heat sink, the pin extending through the opening in the heat sink and the motherboard to couple the heat sink to the electronic device and the motherboard; and
- a member within the opening in the heat sink, the member being between the heat sink and the pin, the member including an upper surface that is substantially planer with the upper surface of the heat sink and a lower surface that is substantially planer with the lower surface of the heat sink.
- 22. (Previously Presented) The electronic assembly of claim 21, wherein the member is a bushing that is pressed into the opening in the heat sink.
- 23. (Previously Presented) The electronic assembly of claim 22, wherein the pin is pressed through an opening in the bushing.
- 24. (Previously Presented) The electronic assembly of claim 21, wherein the member is plastic.

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25. (Previously Presented) The electronic assembly of claim 21, wherein the pin includes a head that is larger than the opening in the heat sink, the head of the pin contacting the upper surface of the heat sink.

- (Previously Presented) The electronic assembly of claim 21, further comprising a 26. thermally conductive material between the heat sink and the electronic device.
- 27. (Previously Presented) An electronic assembly comprising:
  - a heat sink that includes an opening extending through the heat sink;
  - a motherboard;
  - an electronic device between the motherboard and the heat sink;
- a pin that extends through the opening in the heat sink, the pin being soldered to the motherboard to couple the heat sink to the electronic device and the motherboard; and
- a member within the opening in the heat sink, the member being between the heat sink and the pin.
- 28. (Previously Presented) The electronic assembly of claim 27, wherein the member is a bushing that is pressed into the opening in the heat sink and the pin is pressed through an opening in the bushing.
- 29. (Previously Presented) The electronic assembly of claim 27, wherein the heat sink includes an upper surface and a lower surface such that the opening extends between the upper and lower surfaces of the heat sink, the pin engaging the upper surface of the heat sink and the electronic device engaging the lower surface of the heat sink.
- 30. (Previously Presented) The electronic assembly of claim 29, wherein the pin includes a head that is larger than the opening in the heat sink, the head of the pin engaging the upper surface of the heat sink.

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31. (Previously Presented) The electronic assembly of claim 27, wherein the pin includes a body that is cylindrical, and the opening in the heat sink is cylindrical.

- 32. (Previously Presented) The electronic assembly of claim 27, further comprising a thermally conductive material between the heat sink and the electronic device.
- 33. (Previously Presented) A method comprising:

attaching an electronic device to a motherboard;

thermally coupling a heat sink to the electronic device such that the electronic device is between a lower surface of the heat sink and the motherboard;

positioning a member within an opening in the heat sink such that a lower surface of the member is substantially planer with the lower surface of the heat sink and an upper surface of the member is substantially planer with an upper surface of the heat sink;

inserting a pin through the opening in the heat sink and the motherboard such that the pin contacts an upper surface of the heat sink and the member is between the pin and the heat sink; and

securing the pin to the motherboard.

- 34. (Previously Presented) The method of claim 33, wherein securing the pin to the motherboard includes wave soldering the pin to the motherboard.
- 35. (Previously Presented) The method of claim 33, wherein positioning a member within the opening in the heat sink includes pressing a bushing into the opening in the heat sink.
- 36. (Previously Presented) The method of claim 33, wherein positioning a member within the opening in the heat sink includes positioning the entire member within the opening in the heat sink.

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- 37. (Previously Presented) The method of claim 33, wherein positioning a member within the opening in the heat sink includes placing a member that is more elastic than the pin and the heat sink between the pin and the heat sink to alleviate stress between the pin and heat sink.
- 38. (Previously Presented) A computer system comprising:
- a heat sink that includes an upper surface and a lower surface and an opening extending between the upper and lower surfaces of the heat sink;
  - a motherboard:
  - an electronic device between the motherboard and the lower surface of the heat sink;
- a pin that contacts the upper surface of the heat sink, the pin extending through the opening in the heat sink and the motherboard to couple the heat sink to the electronic device and the motherboard:
- a member within the opening in the heat sink, the member being between the heat sink and the pin, the member including an upper surface that is substantially planer with the upper surface of the heat sink and a lower surface that is substantially planer with the lower surface of the heat sink; and
  - a chassis, the motherboard being attached to the chassis.
- 39. (Previously Presented) The computer system of claim 38, wherein the member is a bushing that is pressed into the opening in the heat sink.
- 40. (Previously Presented) The computer system of claim 38, wherein the pin is soldered to the motherboard.